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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/940,490	08/29/2001	Tatsuo Furukawa	862.C2340	4851

5514 7590 02/21/2006

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EXAMINER
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DIVINE, LUCAS

ART UNIT	PAPER NUMBER
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2624

DATE MAILED: 02/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/940,490

Applicant(s)

FURUKAWA, TATSUO

Examiner

Lucas Divine

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 January 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Response to Amendment*

1. Claim 11 is pending.
2. The indicated allowability of claim 11 is withdrawn in view of the newly discovered (in an updated EAST search) reference(s) to Jones et al. (US 6601941).

Rejections based on the newly cited reference(s) follow.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Corrigan, III et al. (US 6575548) in view of Jones et al. (US 6601941).

Regarding claim 1, Corrigan teaches a **printhead** (126 Figs. 1A & 1B) **comprising an element substrate** (col. 2 line 1, Fig. 4, substrate 410; col. 7 lines 6 and 19) **having a printing element** (Fig. 1A, 120) **digital circuit and analog circuit** (col. 9 line 57),

**said digital circuit including for selectively driving said printing element in accordance with input print data** (Figs. 15, 17, 18, 19, 20, 21 and 23 are all digital circuits included in the driving of the printing element, more digital circuits are taught by Corrigan in other figures and in the description as well), **and**

**said analog circuit including detection means for obtaining information** (temperature sensor 2915, Fig. 29, col. 9 lines 52-53, measures information for keeping the printhead at appropriate temperatures),

**wherein a value of a voltage for driving said digital circuit** (col. 11 lines 19-21, wherein the logic circuitry with transistors can be at either VDD [5V] or VCC [12V]) **is different from a value of a voltage for driving said analog circuit** (col. 33 lines 5-10 and 15-17 teach driving voltages for the temperature sensor at 5.12V and 2.7V), **and**

**a voltage generation circuit for generating the voltage by using a voltage for driving said printing element** (Fig. 1A and col. 31 lines 16-17, wherein the voltage from the power supply 114 to 120 is used in all the circuits of the driver head, and thus includes the temperature sensor which includes the analog circuit) **for driving said analog circuit is arranged on said element substrate** (voltage generators 2942 and 2944 drive the components of temperature sensor 2915 [Fig. 29], col. 31 lines 64-65, col. 33 lines 1-20, col. 8 lines 59-60, wherein the sensors are on the driver head, thus the substrate [Fig. 6 also shows sensors 623 located on substrate]),

**said printhead is an inkjet printhead which ejects ink to print** (col. 1 line 12, col. 4 lines 10-11),

**said printing element comprises an electrothermal transducer for generating thermal energy to be applied to the ink so as to eject the ink using the thermal energy** (ink ejection element 416; col. 7 lines 20-22, wherein the ink ejection element acts as a heater [thermal transducer] to eject ink).

Corrigan does not specifically teach the digital circuit comprises a memory for storing at least one of pieces of information related to a resistance value of said

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electrothermal transducer, a resistance value upon operation of said drive means, and a thickness of each layer of said element substrate.

However, Jones teaches placing a memory (26) on a digital circuit (14; col. 3 lines 49-50) that is on a printhead (10). The memory stores temperature data for while the printhead is emitting as a thermal resistance value (abstract and throughout). Thus, Jones teaches **digital circuit comprises a memory for storing at least a resistance value upon operation of said drive means.**

It would have been obvious that the temperature detection of Corrigan can be calculated and stored in memory as done in Jones. The motivation for doing so would have been to have a memory to store data for the temperature controlling section 2916 of Corrigan. The system already has a processor 2971 and it would have been obvious to have a memory to store any code for the processor as well as storing temperature data to perform calculations on it as discussed in Jones (col. 1 lines 40-67 and throughout) and discussed in the performed operations of 2916.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lucas Divine whose telephone number is 571-272-7432. The examiner can normally be reached on Monday - Friday, 7:30am - 5:00pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly Williams can be reached on 571-272-7471. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lucas Divine  
Examiner  
Art Unit 2625

ljd

  
KING Y. POON  
PRIMARY EXAMINER